

APPENDIX "C"

**CARLSBAD MUNICIPAL WATER DISTRICT'S APPROVED MATERIALS LIST
FOR USE ON CONSTRUCTION OF POTABLE AND RECYCLED WATER FACILITIES**

Item	Description	Manufacturer/Model
AIR/VACUUM VALVE 2-INCH		APCO 145C VAL MATIC 202 CRISPIN UL20 Vent-O-Mat Model 050RBX4021
AIR/VACUUM VALVE ABOVE GRADE ENCLOSURE	Air-Vacuum Valve Assembly. See Standard Dwg W7 See "Valve Box" for below grade components	Pipeline Products VCAS 1830 Tan
ANGLE METER STOPS 1-INCH Compression x Meter Nut	1" Bronze Angle Meter Stop (Ball Valve) with 90 Degree Lock Wing, Compression x Outlet Swivel Meter Nut	Ford BA43-444WQ NL Jones E-1963WSG Mueller B-24258 N
ANGLE METER STOPS 1-INCH Flare x Meter Nut	1" Bronze Angle Meter Stop (Ball Valve) with 90 Degree Lock Wing, Flare x Outlet Swivel Meter Nut	Ford BA23-444W NL Jones E-1964W Mueller B-24255 N
ANGLE METER STOPS 2-INCH Compression x Meter Nut	2" Bronze Angle Meter Stop (Ball Valve) with 90 Degree Lock Wing, Compression x Outlet Meter Flange	Ford BFA43-777WQ NL Jones E-1975WSG Mueller B-24276 N
ANGLE METER STOPS 2-INCH Flare x Meter Nut	2" Bronze Angle Meter Stop (Ball Valve) with 90 Degree Lock Wing, Flare x Outlet Meter Flange	Ford BFA23-777W NL Jones E-1973W Mueller B-24277 N
BACKFLOW PREVENTER (R.P.)	Reduced Pressure Principal Type Assemblies; Double Check Valve Detector Assemblies for Fire Sprinkler Systems	List of Approved Backflow Prevention Assemblies by the State of California, Department of Health Services most recent version
CORPORATION STOP, FLARE X MIP	Bronze Flare x MIP Thread Ball Valve (T-Head only) 1"and 2" Full Opening	Ford FB700 NL, Jones E-1929, Mueller B-25025 N
CORPORATION STOP, COMPRESSION X MIP	Bronze Compression x MIP Thread Ball Valve (T-Head only) 1"and 2" Full Opening	Ford FB1100Q NL, Jones E-1957G, Mueller B-25028 N
CORPORATION STOP, MIP X MIP	Bronze MIP x MIP Thread Ball Valve (T-Head only), 1" and 2" Full Opening	Ford FB500 NL, Jones E-1943 Mueller B-2969 N (2") Mueller B-20013 N (1")
BOLTS AND NUTS, 304 SS	Hex-Head Machine, ASTM A193, Grade B8 Bolts and ASTM A194, Grade 8 Nuts	
BOLTS AND NUTS, 316 SS	Hex-Head Machine, ASTM A193, Grade B8M Bolts and ASTM A194, Grade 8M Nuts	
BOLTS AND NUTS, A307	Hex-Head Machine, Cadmium/Zinc Plated, ASTM A307, Grade A Bolts and A307 2H Heavy Hex Nuts	
BONDING AGENT, EPOXY	Epoxy Resin Based Bonding Agent for Bonding New Mortar or Concrete to existing concrete	Sika Sikadur 32 Hi-Mod
BUSHING, INSULATING	Nylon, 1-1/4" x 1", 1-1/2" x 1", 2-1/2" x 2"	Calpico Corrosion Control Products F.H.Mahoney
CASING END SEAL	1/4" Thick Styrene Butadiene Rubber Sheet End Seal. Use 1" Wide Stainless Steel Bands. Zippered End Seals with Stainless Steel Bands may also be used.	Advanced Products & Sys. Cascade Calpico Pipeline Seal & Insulator Powerseal Raychem
CASING SPACER	Stainless Steel Casing Spacer, Center Restrained, Position Type with PVC Liner and Non-metallic Anti-friction Runners	Advanced Products & Sys. Cascade Calpico Pipeline Seal & Insulator Powerseal Raychem
CATHODIC TEST STATION BOX	25.4 Kg (54 lbs) Concrete Body with 5.4 Kg (12 lb) Ductile Iron Lid and Lid Ring. "CP TEST" shall be cast into the Lid in 25mm (1") Letters. For Cathodic Protection Test Stations, Anode Ground Beds and Insulated Flange Test Stations.	Christy G5
CATHODIC WELDING	For Welding Cathodic Bond Wires to Steel Pipelines	

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CHLORINE	Liquid (Gas) or Sodium Hypochlorite Solution. See Section 15040	
COATING, MASTIC	Cold applied Coal Tar or Epoxy based single component, self-priming, heavy-duty protective exterior coating for buried concrete	Carboline Bitumastic 50 Devoe Devtar 5A Polykem 938 Tnemec HB Tnemecol 46-465, HB Tneme-Tar 46H-413
COATING, WATERPROOF	Epoxy Resin Based Cementitious Trowel Grade protective waterproofing for concrete	Sika Top Seal 107 STO CR 241
COUPLING, C900 PVC DEFLECTION	4" through 12" Solid PVC for obtaining deflection only.	Certaiteed Vinyl Iron HD
COUPLING, C900 PVC CLOSURE OR REPAIR	4" through 12" Solid PVC for closure or repair	Certaiteed Vinyl Iron HD
COUPLING, C905 PVC CLOSURE, DEFLECTION OR REPAIR	16" through 36" Solid PVC for Closure, Deflection or Repair	IPEX Nyloplast America Septer
COUPLING, GROOVED	Use for Above Ground DI or Steel Pipe 100mm (4") or larger	Grinnell #7001 Tyler 500 Vitaulic #44, #77
COUPLING, STRAIGHT FLEXIBLE	4" and Larger Steel or Ductile Iron Construction, Slip x Slip, Epoxy Coated with 304 or 316 Stainless Steel Bolts and Nuts. For use on AC, PVC, DI, or Steel Pipe	APAC 301 Ford FC1 Powerseal 3501, 3538 Romac 501 Smith-Blair 411
COUPLING, TRANSITION FLEXIBLE	4" and Larger, Steel or Ductile Iron Construction, Slip x Slip, Epoxy Coated with 304 or 316 Stainless Steel Bolts and Nuts. For use on AC PVC, DI or Steel Pipe	APAC 311, 313 Baker Ford FC2A Powerseal 3501, 3538 Romac 501 Smith-Blair 413 Mueller Maxifit
CUSTOMER SIDE SHUT-OFF VALVE	3/4" and 1" Bronze Customer Shut-off (Ball Valve), Inlet Swivel Meter Nut x Outlet FIP Thread, Lockable Tabs, with Lever Handle	Ford B13-332W w/HT34 B13-444W w/HT34 Jones J-1908W Mueller B-24351
CUSTOMER SIDE SHUT-OFF VALVE	2" Bronze Customer Shut-off (Ball Valve), Inlet Meter Flange x Outlet FIP Thread, Lockable Tabs, with Lever Handle	BF13-777W w/HB-67S Jones J-1913W Mueller B-24337
ELL, BURY, DUCTILE IRON	6" Ductile Iron Bury Ells, Long Radius, Flg x MJ/PO (Use of Short Radius Bury Ells with District Engineer Approval Only)	Clow South Bay Foundry
EPOXY ADHESIVE	High-Modulus, Low Viscosity, Epoxy Resin Based Adhesive suitable for Grouting Bolts or Dowels	Sika Sikadur 31, Sikadur 35
EXPANSION JOINT	For Water Pipeline Bridge Crossings	APAC 703 Dresser 63 Powrseal 3563 Smith-Blair 611, 612
FIRE HYDRANT SPOOL, DUCTILE OR CAST IRON, FLANGED	Ductile or Cast Iron Spool with Integrally Cast Flanges and Machined or Cast Exterior Grooves. Spools 12" or longer shall have grooves 3" from each Flange. Spools shorter than 2" shall have one groove centered between the Flanges. Grooves shall be 3/16" deep, $\pm 1/16"$ and 1/4" wide, $\pm 1/16"$, 6 Holed	
FIRE HYDRANT	6" Standard 150 PSI Wet Barrel Bronze Fire Hydrants with Six-Hole Bolt Pattern. 4" x 2.5" or 4" x 4" x 2.5" Outlets	Clow 2050, 2065 Jones J3700, J3775
FIRE HYDRANT, 200 PSI or Higher	Project Specification Submittal Required	
FITTING, DUCTILE IRON	Flanged, Mechanical, Joint or Push-on Tees, Bends, Crosses, Reducers, Adapters, etc., for Water Lines 4" and larger. Manufactured per AWWA C100, C111, C153. Double Cement Mortar Lined. (SSB Fittings will not be permitted on C905 Pipe.)	Bachman Griffin Nappco/Sigma Pipeline Components Star Tyler

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FITTING, GROOVED	Grooved ductile Iron Fittings for Grooved end Pipes, 4" through 24"	Grinnell TylerG-B Victaulic
FITTING, PIPE RESTRAINT	May be used with or in lieu of thrust blocks with approval of District Engineer	Romac-GripRing Star Pipe-PVC Ring Lock Series 3500 UniFlange - 1300-C
GASKET	1/8" Thick Full Face or Ring, Aramid Fiber Bound with Nitrile. No Asbestos Content	Calpico Garlock 3000 Johns-Manville Klinger 4401 Tripac 5000
GASKET, JOINT RESTRAINT	Rubber Ring Type with Stainless Steel Locking Segments Vulcanized into the Gasket. For use on PVC Carrier and Casing Pipes.	US Pipe Field Lok 350
GASKET, RUBBER GASOLINE RESISTANT	Gasoline Resistant Pipe Gaskets for Water Mains	Newby
GASKET, RUBBER RING	3mm (1/8") Thick, Rubber Ring Type, 1.72 Mpa (250 PSI) Maximum. For 100mm (4") through 900mm (36") Pipe Flanges	Calpico Johns-Manville US Pipe
GREASE	For Bolt Corrosion Protection on Buried Bolts, NO-OX-ID Type	Sanchem NO-OX-ID Dearborn Chemical
GROUT	Non-Shrink Cement Based Construction Grout for Crack Repair, Flooring Mortar, Dowel Grouting, Crack Sealing and General Binding	Sika SikagROUT 212 STO Epoxy Binder CR633 STO Epoxy Gel CR635 STO N-S Grout CR732
JOINT RESTRAINT ASSEMBLY	Only where Concrete Thrust Restraint is not possible. Prior approval of District Engineer is required	
JOINT SEALING COMPOUND, PLASTIC ROPE	For use on Pre-cast Vault and Manhole in Grooved Joints between sections	Quickset Joint Sealing Compound
LUBRICANT, PIPE GASKET	Rubber Gasket Pipe Lubricant for use on PVC or ductile Iron Pipe Joints, NSF Listing required.	Whitlam Blue Lube
METER	Supplied by CMWD	
METER BOX 1" SERVICE	12" x 20" x 12" Polymer Meter Box and Cover for 1" Water Services with meters 1" or smaller. Cover color: Gray for Potable Water Use Purple Lids for Recycled Water Use	Amorcast A6000485 Cover A6000484 Lid, Drop In A6000487
METER BOX 2" SERVICE	17" x 30" x 12" Polymer Meter box with 2-Piece Lid for 2" Water Services with meter larger than 1" and Blowoff Assemblies Cover Color: Gray for Potable Water Use Purple Lids for Recycled Water Use	Amorcast A6001640PC-12 Cover A6001643 Lid, Drop In A6000482
METER BOX 1" SERVICE (Exposed to Traffic Loads)	Gray for Potable Water Use Purple Lids for Recycled Water Use	Brooks Model No.37 with Traffic Rated Lid
METER BOX 2" SERVICE (Exposed to Traffic Loads & for Combination Air Release, Std Dwg W7)	Gray for Potable Water Use Purple Lids for Recycled Water Use	Brooks Model No.66 with Traffic Rated Lid
METER FLANGE	Bronze Meter Flanges for 1-1/2" and 2" Meters with Slotted Holes	Ford CF Series Jones J129 A.Y.McDonald 610F
MORTAR, REPAIR	Two Component, Low Shrinkage, Cement Based with High Compressive and Bonding Strength	Sika Sika Top 122, 123 STO CR 735, CR 740
PAINT	Valve Box Lids Prime Coat required on all above ground metal surfaces	Frazee Traffic Line and Marking Paint Yellow #5020301 (2 coats)
PAINT	Fire Hydrants Prime Coat required on all above ground metal surfaces	Frazee Aero Plate II, Bright Yellow #6480462 (2 coats)
PAINT	Backflow Assys & Vent Pipes, Prime Coat required on all above ground metal surfaces	Rust-Oleum No 7671 Dunes Tan (2 coats)
PAINT, PRIME COAT	Prime Coat, Prime Coat required on all above ground metal surfaces	Rust-Oleum No 769 Damp Proof Red or Rust-Oleum No 865 Enamel-Dunes Tan

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Item	Description	Manufacturer/Model
PIPE, COPPER TUBING	1" Type K Soft Seamless rolled Tubing 2" Type K Soft Seamless Straight Lengths 1" and 2" Type K Rigid Seamless Straight Lengths	Cerro Halstead Lee Mueller Phelps-Dodge
PIPE, DUCTILE IRON	For Water Lines 100mm (4") and larger manufactured per AWWA C111 C115, C150, C151. Double Cement Mortar Lined	American Pipe Griffin Pacific States U.S. Pipe
PIPE, PVC C900	For Water Lines 4" through 12" and 8" Gate Wells. AWWA C900 Class 200 only.	Certainteed Diamond Plastics IPEX JM Eagle North American Pipe Pacific Western VinylTech
PIPE, PVC C905	For Water Lines 16" and 20" through 36". AWWA C905 DR 25 and DR 18	Certainteed Diamond Plastics IPEX JM Eagle North American Pipe Pacific Western Vinyltech
PIPE, STEEL CEMENT MORTAR LINED AND COATED (CML+C)	Steel Cylinder (CML/C), Per AWWA M11 and Section 15061. 1/4" Minimum Wall Thickness. Steel Pipes Used for Recycled Water Installation are to be identified per District requirements. Submittal required.	
PLASTIC ENCASEMENT	12-mil Thick Polyethylene Encasement Sleeve for Ductile Iron Pipe (DIP) per AWWA C105 and Recycled PVC, CMC/L, or DIP Non-Purple Water Pipe. Clear Sleeve for Potable Water Purple Color for Recycled Water	
PLASTIC WRAP	8-mil Thick Polyethylene Encasement for Buried Fittings and Valves -- Double Wrap Clear Sleeve for Potable Water Purple Color for Recycled Water	
PRIMER, WAX TAPE	Surface Primer for Underground Application of Petrolatum Wax Tape	Carboline Denso Paste Trenton Tem-Coat
PROTECTOR POST, STEEL	4" Diameter, 0.250" Wall Galvanized A-120 Steel Pipe, Concrete Filled	
SEALANT	Chemical Grout for Joint Sealing	3M Scotch Seal
SERVICE SADDLE FOR ACP AND DI PIPE	Cast Brass ASTM B62 Body with Silicone Bronze Double Straps, IP Outlet Sizes 25mm (1") and 50mm (2")	Ford 202B Jones J-979 Smith-Blair 323 Romac 202B Mueller BR2B
SERVICE SADDLE FOR PVC C900 PIPE	Bronze or Brass Saddle with Stainless Steel Four Bolt Strap(s), IP Thread Outlet for Sizes 1" and 2" for Pipe Sizes 4" through 12"	Ford202BS Jones J-969 Smith-Blair 393 Romac 202BS Mueller BR2S
SERVICE SADDLE FOR PVC C905 PIPE	Bronze or Brass Saddle with Stainless Steel Four Bolt Strap(s), IP Thread Outlet for Sizes 1" and 2" for Pipe Sizes 16" and Larger.	Ford 202BS Jones J-969 Romac 202B Mueller BR2S
TAG, BRASS IDENTIFICATION	1" Diameter, 18 Gauge Brass with 3/16" Die Stamped Letters and Numbers, Suitable for Attachment to Cathodic Protection Wires by means of a Nylon Zip Tie.	Ford 202BS Jones J-969 Romac 202N
TAPE, OUTER WRAP	Adhesive Plastic Outer Wrap for Wax Petrolatum Tape in Underground Applications	Polyken 960 Trenton Polyply
TAPE, UTILITY	10 to 50 Mil x 2" Wide General Utility Tape for Corrosion Protection of Above and Below Ground Pipes and Fittings	Calpico Northtown Polyken 900 Scotchwrap 3M 50, 51
TAPE, WARNING/IDENTIFICATION	6" Wide, Warning/Identification (Non-Metallic) Marking Tape for Buried Facilities with Continuous Warning "Caution Water Main Buried Below" or "Caution Recycled Water Main Buried Below" Tape for Recycled Water shall be Purple	Calpico, Type 1 Line-Tec, Type B T.Christy Eng., Type 1 Terra Tape, Standard 250 Thor, Elast Tec Northtown

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TAPE WARNING/ IDENTIFICATION FOR RECYCLED IRRIGATION	3" Wide, Warning/Identification (Non-Metallic) Marking Tape for Buried Irrigation Pipelines. Purple Color with Continuous warning "Caution Reclaimed Water Main Buried Below"	Calpico, Type 1 Line-Tec, Type B T.Christy Eng., Type 1 Terra Tape, Standard 250 Thor, Elast Tec Northtown
TAPE, WAX ABOVEGROUND	Petrolatum Saturated Synthetic Fabric Tape for use on Aboveground Couplings, Flanges, Fittings, etc.	Trenton #1 Wax-Tape
TAPE, WAX UNDERGROUND	Petrolatum Saturated Synthetic Fabric Tape for use on Underground Couplings, Flanges, Fittings, etc. Primer and Outer Wrap Required.	Carboline Densyl Tape Trenton #2 Wax-Tape
TAPPING SLEEVE FOR ACP, AND DIP	Fabricated Steel Tapping Sleeve for 4" through 12" Wet Taps. Epoxy Coated with Stainless Steel Bolts and Nuts	Baker 428 Series Ford FTSC Romac FTS-420 Smith-Blair 622
TAPPING SLEEVE FOR PVC (C900 -C905)	Fabricated Steel Tapping Sleeve for 4" through 12" Wet Taps. Epoxy Coated with Stainless Steel Bolts and Nuts	Ford 'FAST' W/S.S. FLANGE Romac SST W/S.S. FLANGE Mueller H304 w/S.S. FLANGE
VALVE STEM EXTENSION, FIBERGLASS	Three Part Fiberglass Valve Extension Kit. Use when extension 8 foot or shorter.	Pipeline Products FPU-210, FPT-200, FPL-220
VALVE STEM EXTENSION, STEEL	Round or Square 1-1/2" Diameter Steel Rod, Welded Construction, Hot Dipped galvanized with Top Centering Ring and AWWA 2" Operating Nuts Top and bottom. Use when extension longer than 8 foot.	Pipeline Products SX-900 South Bay Foundry E4160
VALVE, BALL WITH LOCKING TABS	3/4"Bronze, Straight, FIP x Meter Swivel with Locking Tabs and Purple Handle	1" Ford B13-444w 1" Jones J1908 2" Ford BF13-777W 2" Jones J1913
VALVE, BUTTERFLY 150 PSI	18" and Larger, AWWA C504, Class B. Thermosetting or Fusion Bonded Epoxy coated and Lined. Class D or E Flange x Flange Ends	M&H 1450, 4500 Mueller Lineseal III Pratt Groundhog
VALVE, BUTTERFLY 250 PSI	18" and Larger, AWWA C504, Class B. Thermosetting or Fusion Bonded Epoxy coated and Lined. Class D or E Flange x Flange Ends	M&H 1450, 4500 (Class 250) Mueller Lineseal XP 250 Pratt Triton HP-250
VALVE, GATE, RESILIENT WEDGE (RWGV)	4" through 16", non-rising Low Zinc Bronze or Stainless Steel Stern, Ductile Body and Bonnet, encapsulated Wedge per AWWA C509 or C515 with Epoxy Coated Interior. Manufactured to AWWA C509 or C515, with 250 PSI Rating *Ductile Iron Bodies and Bonnets are required	American FC, Series 2500 AVK 25 Clow F6100, F6100 Ductile Kennedy Ken-Seal ii, KRSR Mueller 2361 M&H 4067, 7067, A2361 U.S. Pipe Metroseal & Metroseal 250
VALVE, PRESSURE RELIEF AND SUSTAINING		Cla-Val
VALVE, HANDLE BALL, 150 PSI	3/4" Through 2", Used as part of meter assembly and provided by CMWD	Jones 3/4" J-1098 Jones 1" J-1908, 2" J-1913 Ford 3/4" B13-332W Ford 1" B13-444W Ford 2" B13-777W
VALVE BOX RECYCLED WATER VALVES	Lid to be marked "Recycled Water", See Standard Dwg W13	South Bay Foundry SBF 1208-N
VALVE BOX	For Gate Valves & Butterfly Valves, See Standard Dwg W13, Lids shall be marked "Water"	Brooks Service 4TT J&R 4T
VALVE BOX	Normally Close Valve, Lids shall be marked "Water"	Brooks Service 3RT
VALVE BOX	1" Blow Off or Manual Air Releases. See Standard Dwg W5, Lids shall be marked "Water"	Brooks Service 4TT J&R 4T
VALVE BOX	2" Blow Off or Manual Air Release. See Standard Dwg W6 Lids shall be marked "Water"	South Bay Foundry SBF 1243
VALVE BOX	4" Blow Off Assembly. See Standard Dwg W11	South Bay Foundry SBF 1243 (for 4" Pipe Outlet) and Brooks 4TT or J&R 4T (for Valve)

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VALVE BOX	Air-Vaccum Valve Assembly. See Standard Dwg W7 Valve Boxes Located in traffic shall use approved manufacturer's Traffic Rated Lids	Amorcast A600 1640 PC-12 w/#60001643*Service 5 Cover Brooks 66 (2-piece lid) J&R No W6B (2-pice lid)